Overview of 2001 Population Estimates for Michigan Counties

The estimates of county population levels that were released by the Census Bureau on April 29, 2002, are the first in a series of annual estimates that will build upon data from the 2000 Census. Although these estimates provide valuable information about population trends since 2000, they are subject to higher levels of error than most similar estimates produced by the Census Bureau in recent years. Because of a technical flaw in one of the key datasets used in the estimation methodology, population growth is understated for some states and counties and overstated for others. As a result, some of the trends suggested by the new estimates may be misleading. Some of the major trends may be somewhat overstated or understated, and some of the more subtle trends may prove to be false.

A description of the apparent flaw in the new estimates is presented below. That description is followed by an analysis of population trends in Michigan counties and county groups.

A Technical Flaw in the Estimates

The Census Bureau has acknowledged a technical flaw in its state and county population estimates for 2001. The problem has been traced to data that were used to estimate migration rates for persons under age 65.

Estimates of migration between states and counties are derived from an analysis of federal income tax returns that is performed for the Census Bureau by the Internal Revenue Service. Tax returns from consecutive years are matched by social security numbers, and the mailing addresses are then compared to determine which households and individuals have moved from one state or county to another. In previous years, this analysis was based on the addresses that taxpayers reported on their tax returns. For 2001, however, the IRS updated its database to reflect address changes reported by the Postal Service. Address changes filed by taxpayers themselves to ensure proper delivery of their rebate checks also contributed to the problem. As a result of these address changes, the IRS analysis reflected migration over a period of roughly eighteen months instead of a twelve-month period. However, because the changes in the database could not be identified in time by the Census Bureau, the resulting rates were treated as if they represented the percentage of people moving from one county to another in a twelve month period.

This causes growth to be understated in many states and counties that are losing population through domestic migration. At the same time, growth is being overstated in many states and counties that are gaining population through domestic migration. Although the resulting error for Michigan is fairly small statewide—the state's growth may have been understated by about 10,000 people—it will reduce Michigan's share of federal funds by several million dollars per year until the problem is corrected. Even more important, this problem introduces a significant amount of uncertainty into the population estimates for many counties.

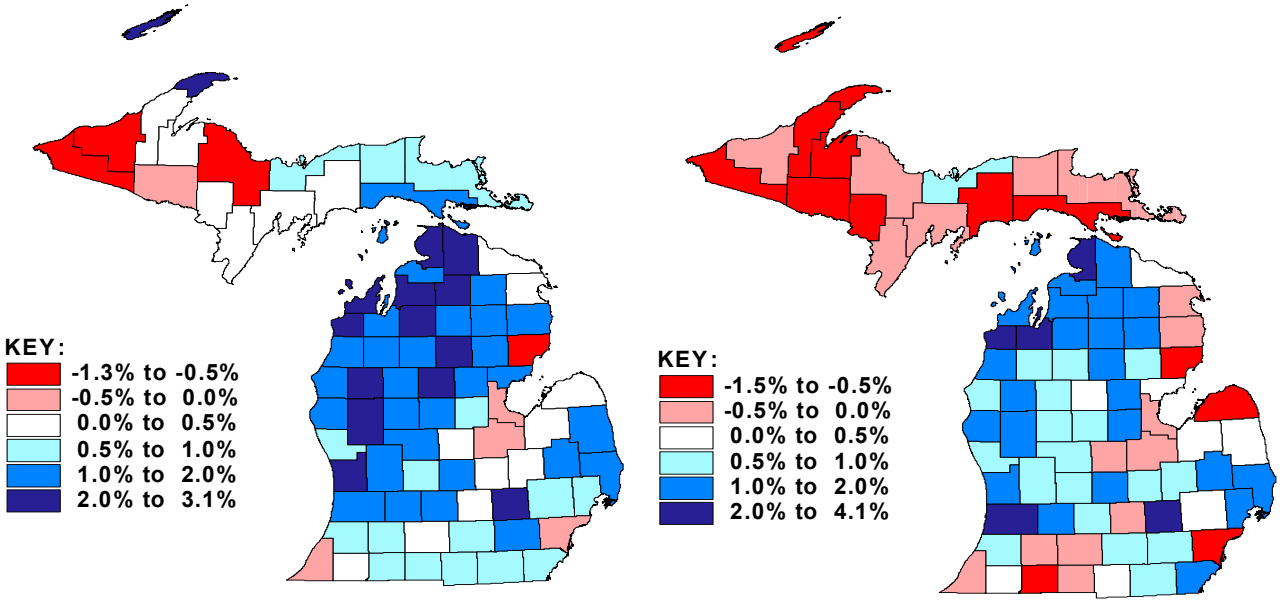
Trends in Individual Counties and County Groups

Maps depicting estimated annual growth rates for 1990-2000 and 2000-2001 are presented in Figure 1. Data on estimated population, estimated annual rates of population growth, and growth in the number of driver licenses are presented in Table 1. Analysis of this information reveals trends for individual counties and groups of counties.

Figure 1

Estimated Annual Growth of Michigan Counties

1990-2000 2000-2001



Upper Peninsula. There was a 0.5 percent decline in estimated household population[1] for the Upper Peninsula as a whole between July 2000 and July 2001. This represents a significant departure from the trend of the late 1990's. According to newly revised figures for the 1990's,[2] the population of the Upper Peninsula was stable or growing in each of the four years leading up to the 2000 Census, following significant population losses in the middle of the decade due to closure of the K.I. Sawyer Air Force Base. For the decade as a whole, the household population of the U.P. posted modest average growth of 0.1 percent per year.

Estimated household population decreased from July 2000 to July 2001 in 14 out of the 15 counties of the Upper Peninsula. The only exception was Alger County, for which estimated household population increased 0.5 percent. In contrast, household population increased in 11 U.P. counties between 1990 and 2000.

[1] The household population excludes people in institutions, dormitories, and other group living quarters.
[2] U.S. Census Bureau, Population Estimates Division, State and County Intercensal Population Estimates, released April 19, 2002.

Because the Upper Peninsula is losing population through migration, the flaw in the population estimates for 2001 tends to cause its population to be understated. This is confirmed by driver license statistics. Although driver license statistics are also an imperfect indicator of population change, they are helpful for identifying counties and groups of counties for which the 2001 estimates should be regarded as uncertain, as well as for indicating the likely direction of error. The decrease in the overall number of driver licenses held by U.P residents from July 2000 to July 2001 (-0.3%) was somewhat less than the estimated decrease in household population (-0.5%). The number of driver licenses increased in six U.P. counties.

The three highest estimated rates of population loss in Michigan are all in the Upper Peninsula. The highest rate of decline was in Iron County (-1.5%), followed by Mackinac County (-1.2%) and Keweenaw County (-1.0%). The number of driver licenses held by Iron County residents declined even faster than its estimated household population (-2.0% vs. -1.5%). The number of driver licenses declined more slowly for Mackinac County (-0.1%) and increased for Keweenaw County (0.7%). The population estimates for these counties are therefore subject to considerable uncertainty.

Northern Lower Peninsula. Although the northern Lower Peninsula continues to be the fastest-growing portion of Michigan, its rate of growth appears to be decreasing. According to the new estimates, growth of household population in these twenty-seven counties[3] decreased from an annual rate of 1.6 percent between 1990 and 2000 to 1.1 percent from 2000 to 2001.

Because the northern Lower Peninsula is gaining population through migration, the flaw in the population estimates tends to cause its population and its growth to be overstated. This is confirmed by the fact that the number of driver licenses in these counties increased by only 0.8 percent from 2000 to 2001.

Estimated rates of growth are highest in Benzie County (2.5%), Emmett County (2.2%), and Grand Traverse County (2.1%). These are the second, third, and fourth highest growth rates in the state. The estimated growth rates for Benzie and Emmett counties are consistent with growth in driver licenses as well as intercensal growth rates. Grand Traverse County's growth rate is more uncertain, since its number of driver licenses increased by only 1.5 percent. (Benzie County and Emmett County are less likely than Grand Traverse County to be seriously affected by problems resulting from faulty analysis of tax returns. Much of their growth involves the population over age 65, which is estimated on the basis of Social Security data rather than tax return data. Grand Traverse County, on the other hand, attracts a large number of younger in-migrants. Its population estimate is, therefore, more sensitive to the technical flaw in the new estimates.)

[3] Alcona, Alpena, Antrim, Arenac, Benzie, Charlevoix, Cheboygan, Clare, Crawford, Emmet, Gladwin, Grand, Traverse, Iosco, Kalkaska, Lake, Leelanau, Manistee, Mason, Missaukee, Montmorency, Ogemaw, Osceola, Oscoda, Otsego, Presque, Isle, Roscommon, Wexford

Central Metropolitan Counties. There was a 0.1 percent decline in estimated household population from 2000 to 2001 for the group of counties in which Michigan's principal central cities are located.[4] This contrasts with a 0.2 percent average rate of increase between 1990 and 2000.

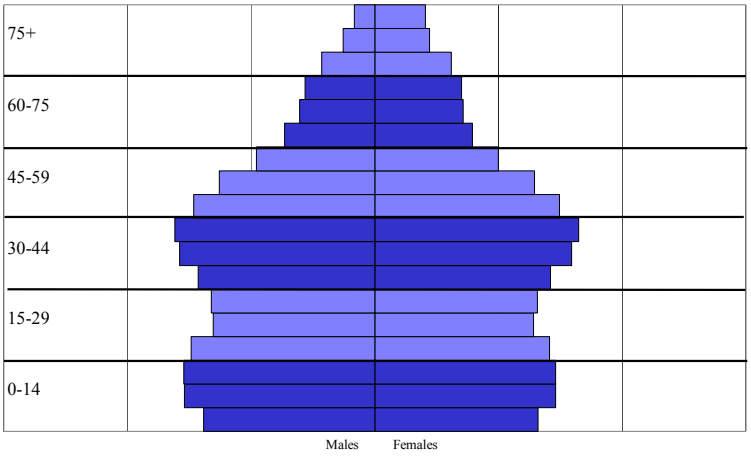
Estimated growth rates declined for 10 out of 12 central metropolitan counties relative to their rate of growth between censuses, and the new estimates suggest that 7 of these counties experienced declines in population levels.

However, the central metropolitan counties may be doing better than these population estimates suggest. Because most of these counties are losing population through migration, the flaw in the estimates tends to cause their population to be understated. Driver license counts for these counties actually increased by 0.3 percent from 2000 to 2001. This indicates that some population losses may be overstated, and that some of the counties which appear to have lost population may actually have grown.

Many central cities should fare better with respect to population in the current decade than they did in the 1990's. Changes taking place in Michigan's age structure suggest that the number of people moving into central cities may increase while the number of people moving out decreases. Central cities tend to attract many young adults and their pre-school children. At the same time, many middle-aged adults and school age children tend to move out of central cities for homes in the suburbs or non-metropolitan areas. Michigan's age structure in 2000 was, therefore, very unfavorable to central cities: the number of young adults and pre-school children was low, while the number of middle-aged adults and school age children was high. (See Figure 2.) However, that large group of school age children will soon become young adults, and the small group of young adults will soon enter middle age. This should tend to increase in-migration and decrease out-migration for central cities in coming years.

Figure 2

Age Distribution of Michigan, 2000



[4] Bay, Berrien, Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Muskegon, Saginaw, Washtenaw, Wayne

Fringe Metropolitan Counties. The new population estimates suggest growth in all 13 of Michigan's fringe metropolitan counties,[5] as was the case from 1990 to 2000. Household population is estimated to have grown more rapidly than between censuses in 9 out of these 13 counties.

For these counties as a group, household population is estimated to have grown by 1.0 percent. This is somewhat below the 1.2 percent annual growth experienced between censuses, but it is consistent with the 1.0 percent growth in driver licenses for these counties. However, growth appears to be overstated for some of these counties and understated for others

Livingston County had the highest estimated growth rate in the state, as well as the largest increase in growth rate relative to the census. The estimated household population of Livingston County increased by 4.1 percent, after growing at an annual rate of 3.1 percent between censuses. If this rate of growth were maintained throughout the decade, the population of Livingston County would increase by 50 percent by the time of the next census. However, because Livingston County attracts a large number of migrants below age 65, the faulty analysis of tax returns may cause its net in-migration to be exaggerated. This is confirmed by driver license counts. Growth in the number of driver licenses held by county residents between 2000 and 2001 (2.9%) was somewhat lower than the growth in household population estimated by Census Bureau (4.1%). This suggests that Livingston County's growth rate may have stayed about the same instead of increasing.

Non-Metro Counties of the Southern Lower Peninsula. Growth rates appear to have declined somewhat in the sixteen non-metropolitan counties of the southern Lower Peninsula.[6] Estimated growth in household population for these counties was only 0.5 percent from 2000 to 2001, compared to an annual rate of 0.9 percent between censuses. The number of driver licenses held by residents of these counties increased by 0.4 percent, suggesting that the population estimates may be fairly accurate for these counties as a group.

Nevertheless, population growth from 2000 to 2001 appears to be overstated for some counties in this group and understated for others. The population estimate for Isabella County is particularly uncertain. Despite rapid growth in the number of driver licenses (1.6%) and rapid annual growth between censuses (1.7%), the population estimate for this county increased by only 0.7 percent. The key to understanding the shortcomings of Isabella County's population estimate is the rapid expansion of Central Michigan

[5] Allegan, Clinton, Eaton, Lapeer, Lenawee, Livingston, Macomb, Midland, Monroe, Oakland, Ottawa, St., Clair, Van, Buren

[6] Barry, Branch, Cass, Gratiot, Hillsdale, Huron, Ionia, Isabella, Mecosta, Montcalm, Newaygo, Oceana, St., Joseph, Sanilac, Shiawassee, Tuscola

University. Enrollment at CMU increased by 4.7 percent from 2000 to 2001, and that increase is equivalent to 1.4 percent of the county's total estimated population. However, because many incoming students do not file federal income tax forms prior to entering college, their migration into the county cannot be measured accurately through the Census Bureau's analysis of tax returns. This problem is usually mitigated by incorporating data on dormitory residents into population estimates, but this was not helpful in the case of Isabella County. The number of off-campus apartments in Isabella County is increasing very rapidly, and reported dormitory populations actually declined. The problems resulting from these factors are compounded by the same overstatement of out-migration that has affected other counties due to faulty analysis of income tax returns. Unless the resulting understatement of Isabella County's population is corrected, it will have a serious effect upon the city, township, and village population estimates that are scheduled for release in the summer of 2002.

Group Quarter Population

Some people live in institutions, dormitories, and other group living situations instead of households. Five counties are known to have experienced significant change in such "group quarter" populations:

- The population increase associated with conversion of Camp Ojibway from a correctional camp to a prison represented 2.9 percent of the total population of Gogebic County.
- A decrease in the number of residents at the Keweenaw Academy was equivalent to 1.2 percent of the total population of Keweenaw County.
- An increase in the number of inmates at the Michigan Youth Correctional Facility represented 0.9 percent of the total population of Lake County.
- The population increase associated with conversion of Camp Pugsley from a correctional camp to a prison represented 0.8 percent of the total population of Grand Traverse County.
- An increase in the number of inmates at the Baraga Maximum Security Facility represented 0.8 percent of the total population of Baraga County.

Michigan Department of Management and Budget
Office of Planning and Local Claims
April 30, 2002